Art. IV.—*Abstract of Reports on the Cultivation of Imphee in the Bombay Presidency, for the Year* 1860. By N. A. Dalzell, Esq., *Superintendent of Forests. Communicated by the Secretary of State for India.*

[*Read 1st June*, 1861.]

Reports on the experimental cultivation of imphee[1] in 1860 having been received from nearly all the Collectorates of Bombay, and having perused them with much interest, the Conservator of Forests has the honour to make the following observations.

2. In order to impress on the minds of all interested in the progress of agriculture in India the great importance of success in this matter, it seems necessary to bring to their notice, as a preliminary step, the very short interval (compared with sugar cane) between the sowing of imphee and the extraction of the sugar, viz., about 100 days, while the sugar cane requires 420 days; therefore imphee sugar can be produced at one-fourth of the labour and expense, and the ground left available for other crops.

3. Wherever these experiments on imphee have been successful, the result is conclusive, and cannot be invalidated by any argument.

4. But the same remarks will not equally apply to unsuccessful experiments: these are not conclusive against the plant for many reasons.

5. A first failure might be attributable to several causes within control, as well as to unsuitable climate.

6. It is not by one experiment that the value of any new object of culture can be ascertained.

7. The nature of the plant may be imperfectly known, as, for instance, at Sholapoor the whitish powder, which covers the imphee in a state of vigorous health, was mistaken for a sign of disease, and probably after the discovery it was left to its fate.

[1] *Holcus saccharatus*, or Chinese sugar cane, now grown in England, and in the South of France as forage; good varieties are found in Southern Africa. It does not ripen its seed in England.

8. Another probable cause of failure is thick sowing, and of this the Conservator has himself been an eye-witness.

9. In a field where imphee had been sown thickly it was surprising to see the vast difference between those stalks which had a little room, and consequently a larger amount of food; instead of the plants being at least two feet distant from each other, five to six grew within one square foot, and it is scarcely necessary to add that they were diminutive depauperated specimens. Another and more obvious cause of failure may be poverty of soil. A gramineous plant growing to the height of nine feet, and three inches in diameter, in seventy-five days, as was the case in the Candesh experiment, demands a great amount of silicate of potash ready and fit for absorption.

10. The last probable cause of failure may have been an irregular or scanty supply of water.

11. All these are within the control of the cultivator, and, therefore, it would be premature to come to the conclusion, to which the majority of the reports lead, that it is not a desirable article of cultivation.

12. From what is known of the nature of imphee, as well as from the eminent success which has attended its cultivation in Upper Sind, the Conservator was prepared to hear most favourable accounts from Ahmedabad and Sholapoor, places having a climate most nearly approaching to Sind, and yet the reports from these Collectorates are decidedly unfavourable, and lead to the supposition that the causes of failure may be obviated in future.

13. The favourable reports are from Belgaum, Sattara, and Candesh.

14. At Belgaum the plant was luxuriant, 11 feet high, with excellent stalks, full of sweet juice.

15. At Sattara it reached a height of eight feet, and was much appreciated by cattle, and forty stalks made 1 lb. of goor.[1] From this amount of goor it is impossible to judge what a beegah[2] would produce without knowing what ground was occupied by forty stalks. If the seed was as thickly sown as in the field alluded to above, it would only be surprising that they yielded any goor at all.

16. As the proportion of rind to pith increases[3] with the size of the stalks in a multiple ratio, the great object is to grow them as

[1] Molasses, or slightly inspissated juice.

[2] From one-third to one-half of an acre.

[3] *Qy.*—Decreases.

large and thick as possible, which can best be done by sowing in drills.

17. In Candesh the plants were 9 feet in height and 3 inches in diameter in seventy-five days from the time of sowing, but were said to contain little or no saccharine matter, a singular circumstance in such vigorous plants, and which can be accounted for only by supposing an excess of water, or a very clouded sky, during the time of ripening.

18. All the other reports are said to be absolute failures.

19. As the imphee approaches most nearly to jowaree in habit and constitution, it would be a waste of labour to attempt its cultivation where jowaree will not succeed; but, for the reasons stated above, the Conservator would recommend that the experiments be repeated in all jowaree districts, and, if possible, on a larger scale.

20. It should not be allowed to grow near jowaree, with which it most readily hybridizes.

21. The opinion of the late Conservator, as contained in the Ahmednuggur report, "that the imphee could not compete with the sugar cane, as long as 16 lbs. of goor can be sold for one shilling," must be judged by the following facts.

22. The present price of goor in the Deccan is only 8 lbs. for a shilling.

23. A beegah of sugar cane, after the protracted labour of planting, constant irrigation and weeding, over a period of fourteen months, produces, 1,500 lbs. of goor in the most favourable circumstances, while imphee produces 500 lbs. in less than one-fourth of the time, and with one-fourth of the labour and expenses; while the ground on which it grew may produce two other crops while the sugar cane is still growing.

24. If the imphee is regarded simply as a forage for cattle of the most superior description, it is desirable to persevere in its cultivation.

25. In the report of the Poona experiment, it is stated that imphee kurbee[1] went five times as far as ordinary kurbee. Imphee is now an established article of Sind cultivation, and will certainly be one of its finest products.

26. Irrigation is necessary wherever the rain is either scanty or irregular.

27. It is not wise to condemn the soil to give that which it

[1] Stalks, dried and used for forage as straw is in England.

produces at a disadvantage, at the expense of what it produces willingly.

28. It ought to be the aim of agriculturists to derive the most advantageous results from the forces of nature; to fight against them is the height of folly; but the Conservator is of opinion that these observations cannot yet with justice be applied to the cultivation of imphee, which should be experimented on still further, to establish its character, particularly in Guzerat, Kattiawar, and the Eastern Deccan.